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CATALOGUE
OF THE
MICROSCOPICAL EXHIBIT
OF THE
U. S. DEPARTMENT OF AGRICULTURE
AT THE
World's Industrial and Cotton Centennial
Exposition,
NEW ORLEANS,
1884-'85.

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UNITED STATES DEPARTMENT OF AGRICULTURE,

DIVISION OF MICROSCOPY,

December, 1884.

WILLIAM SAUNDERS, Esq.,

Representative of the U. S. Department of Agriculture,

World's Industrial Cotton Centennial Exhibition,

New Orleans, Louisiana.

SIR: I have prepared, at your request, a collection of water-color drawings, numbering about eight hundred plates, representing the leading types of the genera and species of fungi, embracing many of the edible and poisonous species found in the United States, together with the types of genera and species of the principal microscopic fungi which prey on living plants, or are otherwise prejudicial to their healthy growth.

Group 1 consists of poisonous mushrooms; Group 2, edible mushrooms.

The edible fungi of the United States at present known consist of about one hundred and thirty species. Mycologists and others interested will probably find in this exhibit a larger number of drawings of native species than can be found elsewhere.

The microscopic fungi are selected from collections made by Dr. M. C. Cooke, Prof. Chas. Peck, Dr. Curtis, and other noted mycologists, many of them having been prepared especially for this division.

I have the honor to be, sir, yours respectfully,

THOMAS TAYLOR, M. D.,

Microscopist.

Group A, from 1 to 48, inclusive. Poisonous Mushrooms.
After Smith, Peck, Cooke, Curtis, Berkeley, &c.

Fig. 1. *Boletus Satanas*, Satanical Tube Mushroom.

This fungus is by far the most splendid of all the *Boleti*. Tops nearly white, very fleshy, a little viscid, stem firm, exquisitely colored and beautifully reticulated; the under surface is a brilliant crimson; when the flesh is broken it changes to blue. It is believed to be highly poisonous.

2. *Agaricus*, *Stropharia æruginosus*.

3. *Russula emetica*, Emetic Mushroom.

This species is deemed dangerous. The skin of the top is scarlet, and may be readily peeled off. Flesh white, gills white. Top highly polished, varies from scarlet and crimson to a faint rose color sometimes shaded with purple. Loves damp places in woods, is acrid, not common.

4. *Agaricus fastibilis*.

5. *Agaricus necator*.

6. *Hygrophorus puniceus*. Given by some as edible.

7. *Agaricus*, *Stropharia*, *semiglobatus*.

8. *Marasmius urens*.

9. *Lactarius acris*.

10. *Russula sanguinea*.

11. *Agaricus pygmæus*.

12. *Agaricus*, *Tricholoma*, *sulphureus*.

13. *Boletus felleus*.

14. *Boletus piperatus*.

15. *Russula foetens*.

16. *Agaricus*, *Inocybe*, *rimosus*.

17. *Boletus bovinus*.

18. *Agaricus*, *Stropharia*, *æruginosus*, Verdigris Mushroom.

This mushroom is said to be poisonous. Top fleshy, slimy, evanescent green, sometimes adorned with white scales, stem hollow.

19. *Lactarius torminosus*.

20. *Lactarius rufus*, Ruddy Milk-Mushroom.

This is one of the most deadly of mushrooms. It generally grows in the woods. Its white milk is singularly acrid and corrosive, which is its best distinguishing mark.

21. *Russula sanguinea*, Blood-Stained Mushroom.

This species is very acrid, sometimes found in the woods, is not very common. Top blood-red, substance firm. The gills are white and run down the stem.

22. *Agaricus*, *Entoloma*, *fertilis*.

23. *Thelephora palmata*.

24. *Lactarius blennius*.

25. *Boletus luridus*, Gloomy Tube Mushroom.

This fungus has a fine appearance in the woods. Its top is umber, relieved on the under surface by bright red, sometimes approaching crimson or even vermilion; when broken or bruised it rapidly changes color to blue.

Common in all places where there are trees, and often comes up early in the year. Poisonous.

26. *Agaricus*, *Amanita*, *muscaria*.

Poison fly mushroom, used by Indians for the purpose of producing intoxication.

27. *Lactarius torminosus*, Gripping Milk-Mushroom.

This dangerous fungus is at once known by the hairy margin of the top, which is rolled inwards. The milk that exudes when the plant is broken is acrid and biting, and does not change color.

28. *Lactarius pyrogalus*.

29. *Lactarius piperatus*, Peppery Milk-Mushroom.

This species is deemed very dangerous. When broken a white milk flows from its flesh which is very acrid; if allowed to trickle over tender hands it will sting like the contact of nettles; if a drop be placed on the lips or tongue, the sensation will be like the scalding of boiling water or the burning of a red-hot iron. It is common in all woods; is particularly firm and solid, and rather brittle. In color it is sometimes as white as snow, at others it inclines to a cream color. Milk very abundant.

30. *Agaricus amethystinus*.

31. *Lactarius theiogalus*.

32. *Panus stypticus*.

33. *Hygrophorus conicus*.

34. *Coprinus picaceus*, Magpie Mushroom.

Coprinus picaceus is poisonous, and resembles the edible *Coprinus* somewhat in form; the former has a repulsive odor. The cap or pileus

is covered with large white and black patches. The species is very rare and grows on roadsides, and is altogether a suspicious-looking plant.

35. *Agaricus viridis*.
36. *Agaricus*, *Amanita*, *vernus*.
37. *Lactarius vellereus*.
38. *Russula emetica*.
39. *Cantharellus aurantiacus*.
40. One of the *Trichogastres*.
41. *Agaricus*, *Hypholoma*, *fascicularis*.
42. *Agaricus*, *Amanita*, *phalloides*.
43. *Clathrus cancellatus*.
44. *Agaricus*, *Hypholoma*, *sublateritius*.
45. *Hygrophorus conicus*.
46. *Clavaria inæqualis*.
47. *Lactarius volemus*.
48. *Boletus Satanas*, variety.

**Group B, from 49 to 154, inclusive. Edible Mushrooms
After Peck, Smith, Cooke, Hussey, Curtis, Greville, &c.**

49. *Helvella crispa*, edible.

Several species of this genus are edible. *Helvella lacunosa* is esteemed equally good, though not as large, and is somewhat rare.

50. *Hydnum repandum*, edible.

This has, instead of gills under the cap, teeth-like projections. Several of this genus are edible, but some are tough and fibrous. *Hydnum repandum* is the most highly esteemed of this genus, but requires long cooking to render it soft and digestible.

51. *Agaricus campestris*, edible.
52. *Boletus variegatus*, “
53. *Agaricus campestris*, variety, edible.

Agaricus campestris is the common meadow pink-gilled mushroom. The spores, when seen under the microscope, are of a purplish-brown color. In Italy and Hungary it is viewed with suspicion, while in England, France, and the United States it is esteemed highly, and is consumed in greater quantities than all others, and is highly nutritious.

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| 54. | <i>Boletus subtomentosus</i> , | edible. |
| 55. | <i>Boletus hepaticus</i> , | " |
| 56. | <i>Cortinarius violaceus</i> , | " |
| 57. | <i>Clavaria vermiculata</i> , | " |
| 58. | <i>Agaricus</i> , <i>Tricholoma</i> , <i>personatus</i> , | " |
| 59. | <i>Agaricus</i> , <i>Amanita</i> , <i>rubescens</i> , | " |
| 60. | <i>Hydnum imbricatum</i> , | " |
| 61. | <i>Coprinus comatus</i> , Maned Mushroom. | |

This fungus should be gathered for the table when the gills are white, or just changing to pink. In the decaying condition it is black and unfit for food. This fungus resembles a closed parasol, is creamy white, and tufted. Those found growing amongst short grass on lawns or by roadsides are best. When found growing in filthy places they should be rejected. This fungus is singularly rich, tender, and delicious.

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| 62. | <i>Tuber æstivum</i> , | edible. |
| 63. | <i>Agaricus pantherinus</i> , | doubtful. |
| 64. | <i>Agaricus oreinus</i> , | edible. |
| 65. | <i>Agaricus alecterophoides</i> , | " |
| 66. | <i>Agaricus</i> , <i>Lepiota</i> , <i>procerus</i> , | " |
| 67. | <i>Boletus scaber</i> , | " |
| 68. | <i>Boletus edulis</i> . | |

Fungi of this class have no gills, but instead have very minute pores, and are classed under Polyporei, or many pored, and are fleshy. Several species are edible and others poisonous. *Boletus edulis*, as the name implies, is edible. Its under surface is yellow when young and edible, greenish when old; flesh white and soft. Its cap or pileus is pale brown, stem stout, reticulated and pinkish at top, smooth below. There are poisonous *Boletui*, which, when broken up and exposed to the atmosphere, turn to a deep blue color. Such should be rejected. *Boleti* are rarely eaten in England or the United States, although a common dish on the Continent of Europe. Dr. Cooke says: "Whilst in Vienna and Hanover we were rather surprised to find *Boletus edulis*, cut into thin slices and dried, exposed for sale in almost every shop where meal, peas, and other farinaceous edibles were sold." Found frequently under oak trees.

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| 69. | <i>Boletus luteus</i> , | edible. |
| 70. | <i>Agaricus ulmarius</i> , | " |
| 71. | <i>Russula virescens</i> , | " |
| 72. | <i>Agaricus campestris</i> , variety, | " |
| 73. | <i>Agaricus procerus</i> , | " |

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| 74. | <i>Cortinarius cinereum</i> , | edible |
| 75. | <i>Lactarius subdulcis</i> , | " |
| 76. | <i>Agaricus</i> , <i>Clitocybe</i> , <i>dealbatus</i> , | " |
| 77. | <i>Cortinarius castaneus</i> , | " |
| 78. | <i>Coprinus atramentarius</i> , | " |
| 79. | <i>Hygrophorus eburneus</i> , | " |
| 80. | <i>Agaricus radicans</i> , | " |
| 81. | <i>Russula alutacea</i> , | " |
| 82. | <i>Lycoperdon giganteum</i> , Giant Puff Ball. | |

This fungus may be found no larger than an apple, although it may attain a "giant" form. All the species are edible when the flesh is white. *Lycoperdon pyriforme* may prove an exception, owing to its bad odor. This fungus is pear-shaped and is warty. It grows in groups.

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| 83. | <i>Hydnum repandum</i> , | edible. |
| 84. | <i>Polyporus sulphureus</i> , | " |
| 85. | <i>Boletus pachypus</i> , | doubtful. |
| 86. | <i>Agaricus Orcellus</i> , | edible. |
| 87. | <i>Agaricus abortivus</i> , | " |
| 88. | <i>Cortinarius violaceus</i> , | variety, edible. |
| 89. | <i>Coprinus comatus</i> , | edible. |
| 90. | <i>Lactarius deliciosus</i> , | " |
| 91. | <i>Boletus edulis</i> , | " |
| 92. | <i>Agaricus cæsareus</i> , | " |
| 93. | <i>Boletus castaneus</i> , | " |
| 94. | <i>Paxillus involutus</i> , | " |
| 95. | <i>Gyromitra esculenta</i> , | " |
| 96. | <i>Cantharellus cibarius</i> , | " |
| 97. | <i>Agaricus bombycinus</i> , | " |
| 98. | <i>Agaricus naucinoides</i> , | " |
| 99. | <i>Helvella crispa</i> , | " |
| 100. | <i>Agaricus campestris</i> , variety. | |

This is the common pink-gilled mushroom of the meadows. The true color of the spores, when seen under the microscope, is a brownish pink or purplish brown.

This mushroom, although highly esteemed as esculent in France, England, and America, is considered poisonous by the Italians and Hungarians. The value of this mushroom depends on the mode of cooking it. Let a common pie-dish be filled with sound fresh specimens of *Agaricus campestris*, peeled, with the stem removed and the gills turned

uppermost; add about an ounce or one-and-a-half ounces of butter in small pieces over the surface; not one drop of water. Sprinkle upon the mushrooms a teaspoonful of salt and a little Cayenne pepper, then bake slowly but thoroughly.

- 101. *Coprinus micaceus*, edible.
- 102. *Agaricus arvensis*, “
- 103. *Polyporus sulphureus*, “
- 104. *Agaricus melleus*, “
- 105. *Agaricus odoratus*, “
- 106. *Russula virescens*, “
- 107. *Morchella conica*, “
- 108. *Morchella esculenta*, Edible Morel.

This fungus is not very common in the United States. The figure shows exactly what the Morel is like; the honey-combed pitted top is hollow, and the almost smooth stem partly so. It yields a delicious catsup, and the whole top, well stuffed with minced veal and dressed between slices of bacon, is a dish of rare and exquisite flavor.

- 109. *Morchella esculenta*, edible, a variety.
- 110. *Morchella elata*, “
- 111. *Morchella praerosa*, “
- 112. *Tuber æstivum*, “
- 113. *Agaricus, Clitopilus, prunulus*, “
- 114. *Cantharellus cibarius*. “

This mushroom is of a rich orange-yellow color, and is prized as a great delicacy. It is common in woods, and may sometimes be detected by its scent, which is that of a ripe apricot. Its taste when uncooked is agreeable but pungent. The pileus or cap, at first convex, afterwards becomes funnel-shaped. Gills thick, obtuse on the edge, forked at top. Stem solid and attenuated downwards.

- 115. *Agaricus, Tricholoma, gambosus*, edible.
St. George's Mushroom.
- 116. *Agaricus, Amanita, strobiliformis*.
- 117. *Agaricus, Clitocybe, nebularis*, edible.
- 118. *Scleroderma vulgare*, “
- 119. *Lycoperdon giganteum*, “
- 120. *Boletus edulis*, variety, “
- 121. *Agaricus, Psalliota, arvensis*, “
- 122. *Lactarius volemus*, “
- 123. *Agaricus, Lepiota, procerus*, “

- 124. *Lycoperdon cyathiformis*, edible
- 125. *Fistulina hepatica*, “
- 126. *Lycoperdon giganteum*, variety, “
- 127. *Agaricus prunulus*, “
- 128. *Hygrophorus virgineus*, “
- 129. *Lactarius deliciosus*, Orange-milk Mushroom.

This is one of the few milk mushrooms which can be safely recommended for the table, and this one can be very easily distinguished, without fear of mistake. When it is bruised it exudes an orange-colored milk. It commonly grows in fir plantations. Its top is of a grayish-yellow with orange colored spots and zones. The flesh of the plant is firm but brittle. *Lactarius deliciosus* can never be mistaken for anything else if the deep orange (or red) milk be observed.

When cooked with taste and care, it is one of the greatest delicacies of the vegetable kingdom, its flesh being more crisp and solid than many other species.

- 130. *Agaricus, Clitocybe, dealbatus*, edible.
- 131. *Merulius Lacrymans*, “
- 132. *Lactarius deliciosus*, variety, “
- 133. *Cortinarius violaceus*, “
- 134. *Morchella esculenta*, variety, “
- 135. *Agaricus, Amanita, rubescens*, “
- 136. *Sparassis crispa*, “
- 137. *Agaricus procerus*, “
- 138. *Boletus Frostii*, doubtful.
- 139. *Agaricus pratensis*, “
- 140. *Helvella crispa*.

This fungus is nearly allied to the true Morel. The stem is full of holes and furrows and the top is lobed and deflexed in a singular and irregular manner. It imparts a delicious flavor to stews and gravies.

- 141. *Boletus subtomentosus*, edible.
- 142. *Cantharellus cibarius*, “
- 143. *Agaricus dealbatus*, “
- 144. *Boletus graulatus*, “
- 145. *Hydnum coralloides*, “
- 146. *Boletus scaber*, “
- 147. *Polyporus confluens*, “
- 148. *Polyporus rutilans*, “
- 149. *Coprinus atramentarius*, “

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| 150. | <i>Agaricus imbricatus</i> , | edible |
| 151. | <i>Coprinus comatus</i> , | " |
| 152. | <i>Boletus strobilaceus</i> , | " |
| 153. | <i>Lycoperdon</i> , variety, | " |
| 154. | <i>Morchella esculenta</i> , variety, | " |

Group C, 155 to 168, inclusive. 13 plates of drawings of Mushrooms collected in the United States by Prof. Peck for the Microscopical Division, including—

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|-----------------------------------|------------------------------------|
| <i>Agaricus spinulifer</i> , | <i>Agaricus galericulatus</i> , |
| <i>Agaricus appendiculatus</i> , | <i>Agaricus purus</i> , |
| <i>Agaricus abundans</i> , | <i>Panus stypticus</i> , |
| <i>Agaricus laccatus</i> , | <i>Coprinus atramentarius</i> , |
| <i>Agaricus Campanella</i> , | <i>Trogia crispa</i> , |
| <i>Cortinarius armillatus</i> , | <i>Paxillus panuoides</i> , |
| <i>Hygrophorus miniatus</i> , | <i>Coprinus comatus</i> , |
| <i>Agaricus vaginatus</i> , | <i>Agaricus solidipes</i> , |
| <i>Hygrophorus borealis</i> , | <i>Lactarius uvidus</i> , |
| <i>Agaricus hæmatopus</i> , | <i>Agaricus sphagnorum</i> , |
| <i>Hygrophorus cantharellus</i> , | <i>Agaricus leptophyllus</i> , |
| <i>Paxillus involutus</i> , | <i>Agaricus cervinus</i> , |
| <i>Lactarius fuliginosus</i> , | <i>Agaricus personatus</i> , |
| <i>Agaricus flammans</i> , | <i>Cortinarius communis</i> , |
| <i>Hygrophorus speciosus</i> , | <i>Agaricus muscarius</i> , |
| <i>Agaricus perplexus</i> , | <i>Agaricus autumnalis</i> , |
| <i>Lactarius cinereus</i> , | <i>Marasmius subvenosus</i> , |
| <i>Lactarius torminosus</i> , | <i>Agaricus tener</i> , |
| <i>Agaricus radicans</i> , | <i>Marasmius rotula</i> , |
| <i>Schizophyllum commune</i> , | <i>Marasmius androsaceus</i> , |
| <i>Agaricus truncicola</i> , | <i>Panus stypticus</i> , |
| <i>Agaricus melleus</i> , | <i>Cortinarius alboviolaceus</i> , |
| <i>Agaricus poculum</i> , | <i>Coprinus micaceus</i> , |
| <i>Agaricus aggericola</i> , | <i>Agaricus phalloides</i> , |
| <i>Hygrophorus eburneus</i> , | <i>Coprinus plicatilis</i> , |
| <i>Lactarius scrobiculatus</i> , | <i>Marasmius perforans</i> , |
| <i>Marasmius striatipes</i> , | <i>Marasmius papillatus</i> . |
| <i>Agaricus polychrous</i> , | |

Group D, from 169 to 178, inclusive. Miscellaneous collection of the Mushroom family, including a number which are not considered esculent, though not poisonous.

- 169. *Boletus elegans*, edible.
- 170. *Agaricus nebularis*, “
- 171. *Lactarius piperatus*, (by some authors considered esculent, by others poisonous.)
- 172. *Agaricus*, *Amanita*, *muscarius*, poisonous.
- 173. *Polyporus lucidus*, not esculent.
- 174. *Polyporus versicolor*, woody.
- 175. *Hydnum auriscalpium*, woody.
- 176. *Agaricus variabilis*.
- 177. *Agaricus cyathiformis*.
- 178. *Agaricus procerus*, edible.

This fungus, which is unusually tall, has its pileus or cap somewhat scaly, whence it derives its subgeneric name, *Lepiota*, from *lepis*, a scale. The stem is hollow and bulbous, and the gills very remote. It is edible, and makes very excellent catsup.

Group E, from 179 to 192, inclusive. Erineums of forest and orchard trees.

- 179. *Erineum* of the Birch, foliage.
- 180. *Erineum* of the Poplar, “
- 181. *Erineum* of the Beech, “
- 182. *Erineum* of the Cherry, “
- 183. *Erineum* of the Poplar, “
- 184. *Erineum* of the Oak, “
- 185. *Erineum* of the Birch, “
- 186. *Erineum* of the Maple, “
- 187. *Erineum* of the Alder, “
- 188. *Erineum* of the Oak, “
- 189. *Erineum* of the Cherry, “
- 190. *Erineum* of the Birch, “
- 191. *Erineum* of the Apple, “

NOTE.—Greville, as well as early mycologists, considered *Erineum* a fungoid growth, but it is now known to be an abnormal cell-growth only, which frequently appears on the foliage of plants; supposed to be caused by mites or other external irritants.

192. Tuckahoe.

Tuckahoe is a subterranean growth; it is found on the roots of trees, and is used by Indians as bread. It is found in Virginia, New Jersey, and several other States. It is supposed to be caused by a fungus, and is completely ramified by mycelium.

Group F, from 193 to 201, inclusive. Insect and fungoid enemies of the American and foreign grape-vines.

- 193. *Peronospora viticola*, American grape-vine fungus.
- 194. Leaf of foreign grape-vine attacked by the fungus *Uncinula spiralis*.
- 195. Leaf of foreign grape-vine attacked by the American grape-vine fungus *Peronospora viticola*.
- 196. Leaf of Scuppernong grape covered by the fungus *Capnodium elongatum* and its mycelium.
- 197. Grape leaf showing effect of thrips.
- 198 and 199. Foreign and American grape leaves, showing the effects of *Phylloxera* at the roots of the vines.*
- 200. Represents a bunch of grapes attacked by the fungus *Uncinula spiralis* and its oidium.
- 201. *Uncinula spiralis*, with its theca, spores and oidium.

Group G, from 202 to 521, inclusive, represents types of the order and genera of the family Ascomycetes.

- 202. Branch of lilac leaves affected by a species of *Microsphaeria*.
- 203. Branch of gooseberry leaves affected by a species of *Microsphaeria* closely resembling *Microsphaeria berberidis*.
- 204. *Microsphaeria berberidis*.
- 205. Montagnei Erysiphe.
- 206. Castagnei Sphærotheca.
- 207. Phyllactinia guttata.
- 208. *Uncinula bicornis*.
- 209. Kunzei Podosphæra.
- 210. Erysiphe Pisi.

211. Rose leaves attacked by the fungus *Sphærotheca pan-*
nosa, (Lev.)
212. *Eurotium herbariorum*, (the yellow mould of jellies.)
213. *Chætomium elatum*.
214. *Meliola amphitriccha*.
215. *Loniceræ Lasiobotrys*.
216. *Loniceræ Lasiobotrys*.
217. *Eurotium herbariorum*, variety.
218. *Cyclospora Orbicula*.
219. *Vulgare Perisporium*.
220. *Mitrula paludosa*.
221. *Leotia lubrica*.
222. *Rhizina undulata*.
223. *Spathularia flavida*.
224. *Nummularia Psilopezia*.
225. *Helvella crispa*, variety.
226. *Herbarum Helotium*.
227. *Peziza aurelia*.
228. *Peziza scutellata*.
229. *Leotia mitrula*.
230. *Geoglossum microsporum*.
231. *Geoglossum glabrum*.
232. *Geoglossum hirsutum*.
233. *Geoglossum viscosum*.
234. *Geoglossum australe*.
235. *Geoglossum glutinosum*.
236. *Geoglossum glutinosum* and *Geoglossum glabrum*.
237. *Geoglossum Walteri*.
238. *Geoglossum Mulleri*.
239. *Geoglossum hirsutum*.
240. *Geoglossum hirsutum*.
241. *Peziza, Cupulares, sylvatica*.
242. *Peziza, Cupulares, sylvatica*.
243. *Peziza, Cupulares, repanda*.
244. *Peziza, Cupulares, leiocarpa*.
245. *Peziza fusispora var. aggregata*.
246. *Geoglossum luteum*.
247. *Geoglossum difforme*.
248. *Geoglossum Peckianum*.
249. *Geoglossum glutinosum*, variety.

250. *Peziza*, Cupulares, leiocarpa, variety
251. *Peziza*, Fusipora, *var.* aggregata, “
252. *Peziza*, Cupulares, tarzetta.
253. *Peziza* nigrella.
254. *Peziza* axillaris.
255. *Peziza* floccosa.
256. *Peziza*, Cupulares, palmicola.
257. *Peziza* echinospora.
258. *Peziza*, Cupulares, micropus.
259. *Peziza*, Cupulares.
260. *Peziza*, Cochlearia, cochleata.
261. *Peziza*, Cupulares, isabellina.
262. *Peziza* vivida.
263. *Peziza* hinnulea.
264. *Peziza* Sowerbey.
265. *Peziza* fusicarpa.
266. *Peziza* stygia.
267. *Peziza* punctiformis.
268. *Peziza*, Cupulares, vesiculosa.
269. *Peziza*, Cupulares, caligans.
270. *Peziza*, Cupulares, cerea.
271. *Peziza* rutilans.
272. *Peziza* hirtipes.
273. *Peziza* Chateri.
274. *Peziza* exidiiformis.
275. *Peziza* melastoma.
276. *Peziza*, Cupulares, adnata.
277. *Peziza*, Cupulares, truncicomes.
278. *Peziza* griseo-rosea.
279. *Peziza* sarmentorum.
280. *Peziza* melaloma.
281. *Peziza*, Cupulares, umbilicata.
282. *Peziza* hepatica.
283. *Peziza* radiculosa.
284. *Peziza* omphalodes.
285. *Peziza* subhirsuta.
286. *Peziza*, Cupulares, crenulata.
287. *Peziza*, Cupulares, microspora.
288. *Peziza*, Cupulares, variety.
289. *Peziza*, Cupulares, applanata.

290. *Peziza*, Cupulares, *Gonnermanni*.
291. *Peziza*, Cupulares, *purpurascens*.
292. *Peziza*, Cupulares, *lividula*.
293. *Peziza*, *Humaria*, *Polytrichi*.
294. *Peziza ammophila*.
295. *Peziza semitosta*.
296. *Peziza tomentosa*.
297. *Peziza Colensoi*.
298. *Peziza gregaria*.
299. *Peziza*, Cupulares, *tapeina*.
300. *Peziza*, Cupulares, *Valenzueliana*.
301. *Peziza*, Cupulares, *chrysopela*.
302. *Peziza violacea*.
303. *Peziza*, Cupulares, *undulata*.
304. *Peziza bella*.
305. *Peziza schizospora*.
306. *Peziza alphitodes*.
307. *Peziza ustorum*.
308. *Peziza Phillipsii*.
309. *Peziza mirabilis*.
310. *Peziza pluvialis*.
311. *Peziza*, Cupulares, *Cordovens*.
312. *Peziza*, Cupulares, *subrepanda*.
313. *Peziza*, Cupulares, *viridaria*.
314. *Peziza spissa*.
315. *Peziza*, *Humaria*, *Gerardi*.
316. *Peziza Franzoniana*.
317. *Peziza scatigena*.
318. *Peziza pubida*.
319. *Peziza leporum*.
320. *Peziza*, Cupulares, *tectoria*.
321. *Peziza lætirubra*.
322. *Peziza sanguinaria*.
323. *Peziza flavo-virens*.
324. *Peziza araneosa*.
325. *Peziza*, *Sarcoscypha*, *hirta*.
326. Fig. 1.—*Peziza euchroa*. Fig. 2.—*Peziza leucoloma*.
327. Fig. 1.—*Peziza Crouani*. Fig. 2.—*Peziza Wrightii*.
328. *Peziza hæmastigma*.
329. *Peziza*, Cupulares, *fusispora*.

- 330. *Peziza corallina*.
- 331. *Peziza*, *Cupulares*, *fuliginea*.
- 332. *Peziza*, *Cupulares*, *sepiatra*.
- 333. *Peziza*, *Cupulares*, *decolorans*.
- 334. *Peziza canina*.
- 335. *Peziza*, *Humaria*, *convexella*.
- 336. *Peziza murina*.
- 337. *Peziza scutellata*.
- 338. *Peziza brunneo-atra*.
- 339. *Peziza arenicola*.
- 340. *Peziza geneospora*.
- 341. *Peziza hirta*.
- 342. *Peziza fuscoatra*.
- 343. *Peziza*, *Humaria*, *modesta*.
- 344. *Peziza*, *Humaria*, *tetraspora*.
- 345. *Peziza*, *Humaria*, *salmonicolor*.
- 346. *Peziza*, *Humaria*, *semi-immersa*.
- 347. *Peziza*, *Humaria*, *Oocardii*.
- 348. *Peziza*, *Humaria*, *pinetorum*.
- 349. *Peziza constellatio*.
- 350. *Peziza lechithina*.
- 351. *Peziza pilifera*.
- 352. *Peziza constellatio*.
- 353. *Peziza deformis*.
- 354. *Peziza Thumeni*.
- 355. *Peziza*, *Humaria*, *globifera*.
- 356. *Peziza*, *Humaria*, *astroidea*.
- 357. *Peziza*, *Humaria*, *flavotिंगens*.
- 358. *Peziza*, *Humaria*, *xanthomela*.
- 359. *Peziza arenosa*.
- 360. *Peziza*, *Humaria*, *adusta*.
- 361. *Peziza sepulta*.
- 362. *Peziza confusa*.
- 363. *Peziza lanuginosa*.
- 364. *Peziza coccinea*.
- 365. *Peziza endocarpa*.
- 366. *Peziza radiculata*.
- 367. *Peziza geaster*.
- 368. *Peziza canina*.
- 369. *Peziza macrospora*.

- 370. *Peziza scatigena*.
- 371. *Peziza subhirsuta*.
- 372. *Peziza brunnea*.
- 373. *Peziza humosa*.
- 374. *Peziza Mulleri*.
- 375. *Peziza geaster*.
- 376. *Peziza auriflava* and *Peziza miltina*.
- 377. *Peziza fusca*.
- 378. *Peziza pellita*.
- 379. *Peziza hemispherica*.
- 380. *Peziza aurantia*.
- 381. *Peziza microspora*.
- 382. *Peziza Persoonii*.
- 383. *Peziza Sphæria*.
- 384. *Peziza vesiculosa*.
- 385. *Peziza cinerea*.
- 386. *Peziza Crouani*.
- 387. *Peziza*, *Cupulares*, *harmoge*.
- 388. *Peziza*, *Humaria*, *limnicola*.
- 389. *Peziza*, *Humaria*, *convexula*.
- 390. *Peziza*, *Cupulares*, *nebulosa*.
- 391. *Peziza occidentalis*.
- 392. *Peziza ollaris*.
- 393. *Peziza granulata*.
- 394. *Peziza ochracea*.
- 395. *Peziza*, *Cupulares*, *amplispora*.
- 396. *Peziza*, *Humaria*, *quisquilarum*.
- 397. *Peziza asperior*.
- 398. *Peziza*, *Cupulares*, *verruculosa*.
- 399. *Peziza fucata*.
- 400. *Peziza*, *Cupulares*, *pulchra*.
- 401. *Peziza*, *Cupulares*, *saniosa*.
- 402. *Peziza*, *Cupulares*, *pustulata*.
- 403. *Peziza*, *Cupulares*, *cribrosa*.
- 404. *Peziza*, *Cupulares*, *cupularis*.
- 405. *Peziza*, *Cupulares*, *pallidula*.
- 406. *Peziza*, *Cupulares*, *carbonaria*.
- 407. *Peziza*, *Cupulares*, *scabrosa*.
- 408. *Peziza*, *Cupulares*, *irrorata*,
- 409. *Peziza violacea*.

- 410. *Peziza*, variety.
- 411. *Peziza* *Agassizii*.
- 412. *Peziza* *Jungermannia*.
- 413. *Peziza*, *Cupulares*, *irrorata*.
- 414. *Peziza*, *Cupulares*, *phyllogena*.
- 415. *Peziza* *fusca*.
- 416. *Peziza*, *Cupulares*, *trachycarpa*.
- 417. *Peziza*, *Cupulares*, *catinoides*.
- 418. *Peziza* *reticulata*.
- 419. *Peziza*, *Cochleata*, *grandis* Pers.
- 420. *Peziza*, *Cochleata*, *atrospora*.
- 421. *Peziza* *acrinosa*.
- 422. *Peziza* *tuberosa*.
- 423. *Peziza*, *Cupulares*, *epispartica*.
- 424. *Peziza*, *Cupulares*, *majalis*.
- 425. *Peziza*, *Cupulares*, *radula*.
- 426. *Peziza*, *Cupulares*, *pseudobadia*.
- 427. *Peziza*, *Cupulares*, *reticulata*.
- 428. *Peziza*, *Sarcoscypha*, *lanuginosa*.
- 429. *Peziza* *fucata*.
- 430. *Peziza*, *Cupulares*, *Petersii*.
- 431. *Cenangium*, *pulveraceum*.
- 432. *Urnula*, *craterium*.
- 433. *Urnula*, *craterium*, variety.
- 434. *Vibrissea*, *truncorum*.
- 435. *Bulgaria*, *inquinans*.
- 436. *Ascobolus* *furfuraceus*.
- 437. *Patellaria*, *atrata*.
- 438. *Midotis*, *emarginatis*.
- 439. *Stictis*, *versicolor*.
- 440. *Cryptomyces* *Wauchii*.
- 441. *Cenangium* *ferruginosum*.
- 442. *Hysterium* *gramineum*.
- 443. *Hysterium* *maculare*.
- 444. *Hysterium*, variety.
- 445. *Hysterium*, variety.
- 446. *Acrospemum*, *graminum*.
- 447. *Ascomycetes*, a species of.
- 448. *Glonium* *lineare*.
- 449. *Hysterium* *pulicare*.

- 450. *Hysterium lineare*.
- 451. *Triblidium caliciforme*.
- 452. *Hypoderma*, commune.
- 453. *Hysterium foliicolum*.
- 454. *Ailographum*, vagum.
- 455. *Lophodermium*, xylomoides.
- 456. *Heterosphæria*, patella.
- 457. *Lophium elatum*.
- 458. *Lophium mytilinum*.
- 459. *Rhytisma*, acerinum.
- 460. *Rhytisma*, salicinum.
- 461. *Phacidium*, repandum.
- 462. *Rhytisma*, salicinum.
- 463. *Trochila*, craterium.
- 464. *Stegia*, ilicis.
- 465. *Sphæria affinis*.
- 466. *Botrytis agaricina*.
- 467. *Dothidea betulina*.
- 468. *Sphæria myriocarpa*.
- 469. *Sphæria lignaria*.
- 470. *Cryptosphæria millepunctata*.
- 471. *Sclerotium scutellatum*.
- 472. *Nectria*, cucurbitula.
- 473. *Eutypa*, lata.
- 474. *Dothidea*, graminis.
- 475. *Dothidea Robertiana*.
- 476. *Nectria sanguinea*.
- 477. *Netria episphæria*.
- 478. *Xylaria gracilis*.
- 479. *Nummularia discreta*.
- 480. *Ustulina vulgaris*.
- 481. *Xylaria graminicola*.
- 482. *Dothidea alnea*.
- 483. *Dothidia ulmi*.
- 484. *Sphæria Pulvis-pyrius*.
- 485. *Isothea*, pustula.
- 486. *Stromatosphæria*, fragiformis.
- 487. *Sclerotium*, semen.
- 488. *Botrytis*, agaricina.
- 489. *Cryptosphæria*, capillata.

490. *Hypocrea*, *citrina*.
491. *Epichloe*, *typhina*.
492. *Poronia*, *punctata*.
493. *Sphærella*, *maculæformis*.
494. *Venturia*, *Myrtilli*.
495. *Microthyrium*, *microscopicum*.
496. *Thamnomycetes*, *hippotrichoides*.
497. *Sphæria*, *Sporomia*.
498. Perithecium of *Sphæria morbosa*, Black knot of the plum and cherry tree, highly magnified.
499. Branch of plum tree affected by Black knot.
500. Branch of cherry tree affected by Black knot.
501. Branch of cherry tree affected by Black knot, with sectional view of knot.
502. *Hypomyces*, *lactifluorum*.
503. *Cucurbitaria*, *elongata*.
504. *Melanconis*, *stilbospora*.
505. *Xylaria*, *hypoxylon*.
506. *Cucurbitaria*, *berberidis*.
507. *Hypoxylon*, *coccineum*.
508. *Diatrype*, *disciformis*.
509. *Capnodium*, *mangiferum*.
510. *Capnodium*, *elongatum*.
511. *Capnodium*, *Citri*.
512. *Stromatosphæria*, *Stigma*.
513. *Sphæria*, *pleispora*.
514. *Sphæria*, *sordaria*.
515. *Valsa*, *quaternata*.
516. *Gnomonia*, *setacea*.
517. *Massaria*, *vomitaria*.
518. *Cucurbitaria*, *pinastri*.
519. *Epichloe*, *typhina*.
520. *Sporidermium*, *atrums*.
521. *Sphæria*, *aurantiaca*.
522. *Polystigma*, *rubra*.

Group G, from 523 to 547, inclusive, represents types of the orders and genera of the family Gasteromycetes.

- 523. *Rhizopogon*, *rubescens*.
- 524. *Clathrus*, *cancellatus*.
- 525. *Bovista*, *nigrescens*.
- 526. *Polysaccum*, *crassipes*.
- 527. *Lycoperdon*, *pyriforme*.
- 528. *Scleroderma*, *vulgare*.
- 529. *Geaster*, *Michelianus*.
- 530. *Æthidium*, *flavum*.
- 531. *Dictydium*, *cernuum*.
- 532. *Stemonitis*, *fusca*.
- 533. *Didymium*, *cinereum*.
- 534. *Arcyria*, *punicea*.
- 535. *Lycogala*, *epidendrum*.
- 536. *Diderma*, *globosum*.
- 537. *Trichia*, *chrysoperma*.
- 538. *Badhamia*, *capsulifera*.
- 539. *Arcyria*, *punicea*.
- 540. *Lycogala*, *minutum*.
- 541. *Spumaria*, *alba*.
- 542. *Perichæna*, *populina*.
- 543. *Physarum*, *aureum*.
- 544. *Trichia*, *reticulata*.
- 545. *Craterium*, *leucocephalum*.
- 546. *Angioridium*, *sinuosum*.
- 547. *Cyathus*, *striatus*.

Group H, from 548 to 628, inclusive, represents types of the orders of the genera of the family Coniomycetes.

- 548. *Diplodia*, *ilicis*.
- 549. *Cheilaria*, *arbuti*.
- 550. *Macroplodia*, *conigena*.
- 551. *Actinothyrium*, *graminis*.
- 552. *Septoria*, *virgaureæ*.
- 553. *Asteroma*, *Rosæ*.
- 554. *Vermicularia*, *dematium*.

- 555. *Prosthemium*, *betulinum*.
- 556. *Phoma*, *vitis*.
- 557. *Actriphus*, *phyllosticta*.
- 558. *Leptothyrium*, *ribis*.
- 559. *Sphæroopsis*, *malorum*.
- 560. *Dinemasporium*, *herbarum*.
- 561. *Centhospora*, *Lauri*.
- 562. *Discosia*, *alnea*.
- 563. *Dilophospora*, *graminis*.
- 564. *Dinemasporium*, *herbarum*.
- 565. *Coryneum*, *disciforme*.
- 566. *Stilbospora*, *macrospora*.
- 567. *Sarcostroma*, *Berkelei*.
- 568. *Pestalozzia*, *Guepini*.
- 569. *Melanconium*, *bicolor*.
- 570. *Didymosporium*, *betulinum*.
- 571. *Næmospora*, *Rosæ*.
- 572. *Stegonosporium*, *cellulosum*.
- 573. *Cheirospora*, *botryospora*.
- 574. *Asterosporium*, *Hoffmanii*.
- 575. *Sporochisma*, *mirabile*.
- 576. *Torula*, *splendens*.
- 577. *Bispora*, *monilioides*.
- 578. *Iporodes*, *composition*.
- 579. *Helicosporium*, *Ellisii*.
- 580. *Bactridium*, *flavum*.
- 581. *Septonema*, *spilomeum*.
- 582. *Puccinia*, *variabilis*.
- 583. *Puccinia*, *graminis*.
- 584. *Xenodochus*, *carbonarius*.
- 585. *Ravenelia*, *glanduliformis*.
- 586. *Podisoma*, *macropus*.
- 587. *Triphragmium*, *ulmariae*.
- 588. *Phragmidium*, *mucronatum*.
- 589. *Trichobasis fallens* (Clover rust.)
- 590. *Tubercinia*, *trientalis*.
- 591. *Thecaphora*, *hyalina*.
- 592. *Ustilago*, *segetum*.
- 593. *Polycystis*, *pompholygodes*.

594. *Tilletia caries* (on wheat kernels.)
595. *Uredo, polygonorum*.
596. *Uredo, hypericorum*.
597. *Uredo effusa*.
598. *Coleosporium, tussilaginis*.
599. *Lecythea, rosea*.
600. *Cystopus, candidus*.
601. *Trichobasis, rubigo-vera*.
602. *Hemelia, vastatrix*.
603. *Hemelia, vastatrix* (Coffee leaf fungus.)
604. *Uromyces, concentricus*.
605. *Melampsora, populina*.
606. Raspberry leaf showing effects of rust.
607. *Physarum cinereum*.
608. *Æcidium grossularia*, *Æcidium* of the gooseberry leaf.
609. *Røestelia lacerata* on hawthorn leaves.
610. *Røestelia aurantiaca* of the hawthorn.
611. Fig. 1.—*Røestelia lacerata*, common hawthorn fungus.
 Fig. 2.—*Røestelia aurantiaca*, Peck, first discovered
 on hawthorn by Dr. Thomas Taylor. Hawthorn
 branch showing effects of the *Røestelia lacerata*
 on the fruit.
612. A leaf of English hawthorn affected by *Røestelia lac-*
erata.
613. Branch of quince tree affected by *Røestelia aurantiaca*.
614. Branch of barberry bush showing the effects of *Æcid-*
ium berberidis.
615. *Æcidium berberidis* on barberry branch, after Greville.
616. *Æcidium, berberidis*, after Cooke.
617. A species of apple leaf affected by an *Æcidium* (im-
 mature.)
618. *Røestelia cancellata*, on the Russian apple leaf.
619. *Røestelia cornuta* on pear leaf.
620. *Røestelia, cornuta*.
621. *Peridermium pini*, Pine *Æcidium*.
622. *Peridermium pini*, Pine *Æcidium*.
623. *Peridermium pini*.
624. *Peridermium pini*, variety.
625. *Æcidium* (immature) on ash leaves.

- 626. *Æcidium thalietri*.
- 627. *Graphiola phœnicis*. Date palm fungus.
- 628. Rust of wheat, *Trichobasis rubigo-vera*.

Group I, from 629 to 687, inclusive, represents types of the orders and genera of the family Hyphomycetes.

- 629. *Tubercularia*, vulgare.
- 630. *Epicoccum*, neglectum.
- 631. *Hyphomycetes stilbum*, talerilum.
- 632. *Ægerita candida*.
- 633. *Stilbum tomentosum*.
- 634. *Ægerita candida*.
- 635. *Ægerita setosa*.
- 636. *Arthrimum*, sporophœum.
- 637. *Helminthosporium*, folliculatum.
- 638. *Alternaria*, tenuis.
- 639. *Triposporium*, elegans.
- 640. *Macrosporium*, commune.
- 641. *Clasterisporium*, caricinum.
- 642. *Sporocybe*, byssoides.
- 643. *Dematei*, a species of
- 644. *Dendryphium*, ramosus.
- 645. *Haphlographium*, delicatum.
- 646. *Camptoum*, curvatum.
- 647. *Periconia*, brassicola.
- 648. *Arthrobotryum*, atrum.
- 649. *Cladotrichum*, triseptatum.
- 650. *Polythrincium*, Trifolii.
- 651. *Stachybotrys*, lobulata.
- 652. *Monotospora*, sphærocephala.
- 653. *Helminthosporium*, velutinum.
- 654. *Helminthosporium*, macrocarpum.
- 655. *Gonytrichum*, cæsium.
- 656. *Polythrincium*, Trifolii.
- 657. *Polythrincium*, variety.
- 658. *Menispora*, ciliata.
- 659. *Botryosporium*, pulchrum.
- 660. *Fusidium*, griseum.

- 661. *Monilia antennata*.
- 662. *Ramularia, armoraciæ*.
- 663. *Sporotrichum sulphureum*.
- 664. *Sporotrichum minutum*.
- 665. *Acremonium verticillatum*.
- 666. *Trichothecium, roseum*.
- 667. *Acrosporium moniloides*.
- 668. *Fusidium griseum*.
- 669. *Fusidium flavovirens*.
- 670. *Gonatobotrys, simplex*.
- 671. *Botrytis nigra*.
- 672. *Ædocephalum, roseum*.
- 673. *Zygodesmus, fuscus*.
- 674. *Aspergillus, glaucus*.
- 675. *Pilacre, Petersii*.
- 676. *Trichoderma, viride*.
- 677. *Peronospora, Schleideniana*. Onion mould.
- 678. *Peronospora arenaria*. Sandwort mould.
- 679. *Peronospora parasitica*. Turnip mould.
- 680. *Peronospora viciæ*. Pea mould.
- 681. *Peronospora pygmæa*. Anemone mould.
- 682. *Peronospora obliqua*. Dock mould.
- 683. *Peronospora infestans*. Potato mould.
- 684. Resting spores of *Peronospora infestans*, fungus of the
potato. After W. G. Smith.
- 685. Resting spores of *Peronospora infestans*, fungus of the
potato.
- 686. Resting spores of *Peronospora infestans*, fungus of the
potato.
- 687. Resting spores of *Peronospora infestans*, fungus of the
potato.

Group J, from 688 to 725.—Miscellaneous.

- 688. *Mucor, caninus*.
- 689. *Ascophora, mucedo*.
- 690. *Mucor, caninus, variety*.
- 691. *Mycelium of Antennaria*. Black felted fungus of the
orange and coffee leaf.

- 692. Branch of pear tree, sectional view, showing the stain of the blight on the inner portion of wood.
- 693. Branch of pear tree, showing effects of pear tree blight in shrivelled leaf and fruit.
- 694. Specimens of mycelium found at the root of diseased pear tree, fungus unknown.
- 695. Branch of fig tree, showing effects of rust.
- 696. "Orange tree rust," an abnormal growth on twigs.
- 697. Branch of peach tree affected by "yellows."
- 698. Butter plates, showing butter and fats as seen by polarized light, by Dr. Taylor.

**Wools and other fibres treated with Sulphuric Acid, &c., by
Dr. T. Taylor.**

- 699. Shows the effect of sulphuric acid on cow's hair and on human hair.
- 700. Shows the effect of sulphuric acid and iodines on wools.
- 701. Silk and wool textures treated alternately with sulphuric acid and dilute caustic potash.
- 702. Cotton and wool fibres highly magnified.
Fig. 1 represents fibres of cotton simply magnified.
Fig. 2 after treatment with sulphuric acid and iodine.
A, same plate, represents cotton and wool fibres highly magnified, showing condition after treatment with sulphuric acid and iodine.
- 703. Shows the effect of nitric acid on black silk and the effects of potash on the same.
- 704. Fibres of flax and cotton treated with sulphuric acid and iodine.
- 705. Cotton fibre highly magnified.
- 706. Figs. 1, 2, 3, 4, and 5. Cotton and flax fibres treated with sulphuric acid and iodine.
- 707. Fig. 6. Cholestrine colored blue by sulphuric acid and iodine.
- 708. Fibres of silk magnified and fibres of silk and wool treated with muriatic acid.
- 709. Flax slightly treated with sulphuric acid and iodine.
- 710. Cholestrine from brain matter, treated with iodine and sulphuric acid.

- 711. Cholestrine highly magnified.
- 712. Branch of rose leaves, covered by spores of an unknown fungus.
- 713. *Hydnum erinaceus*.
- 714. *Hydnum erinaceus*, a variety.
- 715. *Tremelledon gelatinosum*.
- 716. *Thelephora laciniata*.
- 717. *Trichothecium roseum*.
- 718. *Merisma tuberosum*.
- 719. *Pyrenium lignatile*.
- 720. *Thelephora quercina*.

